

HEAVYLIFT@SEA – Service Offshore Vessel (SOV)

HeavyLift@Sea, the design specialist of offshore and multipurpose vessels, presents an update of its advanced purpose-built Service Offshore Vessel (SOV).

SOVs are the latest innovative approaches in the sector of customized vessels, particularly with respect to the service of offshore wind farms.

Nowadays over 80 offshore wind farms are equipped with more than 3,200 installed and grid-connected turbines. Among others Siemens, MHI Vestas, Adwen, GE Renewable Energy and Servion are counting to be the top offshore wind turbine suppliers in terms of installations. These major players in the market intend to further diversify and secure customer loyalty and increase market shares and earnings by adding 5, 10 or 15 years long-term Service Agreements to their wind turbine orders.

Long-term Service Agreements may also be expanded to Service and Availability Agreements that comprise of energy based availability guarantee ensuring higher output and operability of the wind farms. When it comes to preventive and corrective maintenance tasks and finally performance and availability of electricity the SOV is a key asset for wind park stakeholders.

HeavyLift@Sea designed a SOV that is available in different variants and configurations. The standard configuration serves as base for 60 technicians and crew members but can also be reduced to 40, if required.

The SOV prevents different measures for a comfortable and restful stay on board:

- 40 - 60 single cabins
- Low noise level during operation of the vessel through acoustically insulated bulkheads and decks in the accommodation and adjacent to thruster rooms, engine rooms and hydraulic rooms
- Response to roll motions by a roll reduction tank system
- Tank and store capacities designed for an endurance of min. 30 days

At a length of 71.40 m, a breadth of 16.70 m and a draught of max. 5.60 m the SOV is designed for optimal sea going capabilities. The deadweight carrying capacity is of abt. 1,800 metric tons. The trial speed of 13 knots is achieved by two (2) main engines of 1,400 kW, three (3) auxiliary engines of 1,200 kW and two (2) controllable pitch propellers. High maneuverability is realized by two (2) high lift flap rudders and five (5) transversal thrusters.

The proven conventional diesel-mechanical propulsion system is more cost efficient than azimuth thrusters or similar systems and particularly appropriate for long distances and fast transits.

Exact positioning and station keeping (DP2) of the vessel is secured by three (3) bow thrusters and two (2) stern thrusters in combination with the propellers and the rudders.

Several transfer systems onboard enable technicians and workers to access the offshore structures:

- The **motion compensated gangway** gives the SOV walk-to-work capability and is arranged on portside. The motion compensated gangway will be able to transfer technicians safely in min. 2.5m Hs. The height of TP can be 20m at LAT.
- A **lift** is arranged next to the gangway and elevates personnel and cargo up to 300kg from main deck to the gangway system.
- The **daughter craft** is a closed superstructure type with redundant propulsion. It has a capacity of 2 crew and 8 passengers. Speed is up to 30 kn. On the large working area in the fore deck cargo load of 1.000 kg can be stored.
- The launch and recovery of the daughter craft will be safe also in rough sea condition. For launch and recovery, an **active slipway system** is arranged inside the garage. For recovery, the daughter craft enters the garage and a friction-based transport system will move the boat into the final stowage position. The stern hangar concept sets this SOV apart from other service vessel designs and allows safe launching and recovering of the daughter craft even in worse weather conditions.

For the use of external vessels (e.g. crew transfer vessels) the SOV is equipped with an **additional boat landing system** for safe entering of the SOV.

The SOV accommodates a covered warehouse for spare parts and tools. The dimensions of the cargo hold is 10.8 m x 15.2 m allowing the stowage of up to 6 TEU containers. The cargo hold is covered by two pontoon hatch covers. The respective deck area of 300m² gives sufficient space for service and maintenance work outside the workshops.

The deck crane of SWL 5t@20m is arranged portside and shall be of knuckle boom type. The operation of the crane is possible under harbor and offshore condition ($H_s = 2.50$ m).

HeavyLift@Sea provides an advanced and well thought out SOV design customized for the wind energy O&M market. It fulfils all technical and operational requirements to successfully service the stakeholders in the wind energy market:

- Accommodation for sufficient number of technicians, workers and crew as required
- Lay-out of the vessel corresponds to the technical workflow
- Clear und logical spatial separation of accommodation and working areas
- 300m² deck space for service and maintenance work at sea
- Save and fast launching / recovery of daughter vessel through stern hangar
- Capable deck equipment for handling of spares/tools and walk-to-work capability
- Conventional propulsion system ideally for long distance and high speed transits

For associated equipment solutions please visit the website of our subsidiary **MATE@SEA**:

www.mate-at-sea.de